

Enzyme Short Constructed Response

On a separate sheet of paper answer the following questions. Clearly label each part of the question. This will be a quiz grade, but you may use your notes and a partner. Each person must write their own response. **Assignment is due at the end of class.**

1. An experiment was conducted to measure the reaction rate of the human salivary enzyme α -amylase. Ten mL of a concentrated starch solution and 1.0 mL of α -amylase solution were placed in a test tube. The test tube was inverted several times to mix the solution and then incubated at 25°C. The amount of product (maltose) present was measured every 10 minutes for an hour. The results are given in the table below.

Time (minutes)	Maltose Concentration (μ M)
0	0
10	5.1
20	8.6
30	10.4
40	11.1
50	11.2
60	11.5

- (a) **Graph** the data and label the axis. Remember all parts that should be included in a graph.
- (b) **Calculate** the rate of the reaction for the time period 0 to 30 minutes.
- (c) **Identify** TWO environmental factors that can change the rate of an enzyme-mediated reaction. **Discuss** how each of those two factors would affect the reaction rate of an enzyme.